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THE PLANT DISEASE REPORTER

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Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Volume XXV Number 4

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IN THIS ISSUE

Check List Revision, by Freeman Weiss, page 106.

Some new records in the United States of the Adelopus needle cast of Douglas fir are reported by Glenn Gardner Hahn, page 115.

Little-leaf is becoming an important disease of shortleaf pine in certain southern areas, according to E. Richard Toole and Thomas S. Buchanan, page 117.

Cabbage black spot caused serious loss in the Lower Rio Grande Valley of Texas this year, according to G. H. Godfrey, page 119.

John R. Hardison contributes a list of grass diseases observed in Michigan in 1940, page 120.

In spite of numerous hazards, cereal rust infection in Oklahoma is unusually prevalent for this time of the year, according to David Dunn, page 125.

Brief notes, page 127, include reports on an outbreak of tomato gray spot in Florida by D. G. A. Kelbert, and heavy stem rust infection in the 1940 oat variety nursery at Laramie, Wyoming, by G. H. Starr.

CHECK LIST REVISION

Freeman Weiss

CORYLUS (BETULACEAE)

CORYLUS spp., including C. AMERICANA Marsh., AMERICAN HAZELNUT and C. CORNUTA Marsh. (C. rostrata Ait.), BEAKED HAZELNUT; shrubs of Growth Regions 15, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29; C. CALIFORNICA (A. DC.) Bose, CALIFORNIA HAZELNUT, shrub or small tree in Growth Regions 1, 2, 3, 4.

Apioporthe anomala (Pk.) Höhn., canker, twig blight. Eastern and Central States.
Catinula turgida (Fr.) Desm., on twigs. N. H., N. Y., Pa. (Should probably be Cryptosporiopsis; conidial stage of Pezicula corylina)
(Cryptosporella anomala (Pk.) Sacc.): Apioporthe anomala.
Cucurbitaria conglobata (Fr.) Ces. & De Not., on branches. Pa.
Cylindrosporium vermiformis J. J. Davis, leaf spot. Wis.
Diaporthe decedens (Fr.) Fckl., on twigs. Calif., N. Y. to Iowa; D. eres Nit., N. J.
Gloeosporium coryli (Desm.) Sacc. leaf spot. Me. to N. J. & Pa., Oreg. & Wash.
(G. profusum Ell. & Ev.): Septogloeum profusum.
Gnomoniella coryli (Batsch ex Fr.) Sacc. General.
Hymenochaete agglutinans Ell., canker. Me.
Melanconis flavo-virens (Otth.) Weh. (M. sulphurea (Fckl.) Petr.), on twigs. N. Y.
Microsphaera alni DC. ex Wint., powdery mildew. Eastern and Central States.
(Myxosporium sulphureum Sacc.): Melanconis flavo-virens.
Nectria coryli Fckl., on dead branches. N. J., N. Dak. (Probably = N. inaurata Berk. & Br.)
Pezicula corylina Groves (Catinula turgida (Fr.) Desm.), on twigs. N. H., N. Y.
Phyllactinea corylea Pers. ex Karst., powdery mildew. General.
Phyllosticta coryli West. leaf spot. Widespread.
(P. corylina Ell. & Mart.): Gloeosporium coryli.
Physalospora obtusa (Schw.) Cke., on branches. Calif., N. J.
Phytomonas colurnae Thornberry & And., bacterial leaf spot. Ill. (On Corylus colurna L.)
P. corylina Miller et al., bacterial blight. Oreg.
Scolecosporium coryli Dearn. & House, on leaves. N. Y.
Septogloeum profusum (Ell. & Ev.) Sacc., leaf spot. Ind., Mass., Miss.
Septoria corylina Pk., leaf spot. Widespread.
(Sphaeronema coryli Pk.): Pezicula corylina.
Sphaeropsis coryli Ell. & Ev. (?Physalospora obtusa (Schw.) Cke.), on branches. N. J., N. Y.

CORYLUS--Continued

Taphrina coryli Nishida, leaf curl. Pa., Wis.
Valsa ambiens Pers. ex Fr., on twigs. Oreg.

CORYLUS AVELLANA L., EUROPEAN HAZELNUT and C. MAXIMA Mill., FILBERT. Cult., especially in Oregon and Washington.

Apioporthe anomala (Pk.) Höhn., canker, twig blight. Eastern and Central States.
Armillaria mellea Vahl ex Fr., root rot. Pacific Coast.
Diplodia sarmentorum Fr. (D. coryli Fckl.), on twigs. Oreg.
Gloeosporium coryli (Desm.) Sacc., leaf spot. N. J.
Phyllactinia coryli Pers. ex Karst., powdery mildew. Pacific Coast.
Physalospora obtusa (Schw.) Cke., on branches. Calif.
Phytomonas corylina Miller et al., bacterial blight. Oreg., Wash.
P. tumefaciens (EFS) Bergey, crowngall. Wash.
Bitter pit (of kernels),-- cause unknown. Pacific Northwest.
Brown stain (of nuts), -- cause unknown. Pacific Northwest.
Shrivel (failure of embryo to develop, -- sterility. - Pacific Northwest.

COTINUS (ANACARDIACEAE)

COTINUS spp. C. COGGYGRIA Scop. (Rhus cotinus L.), SMOKETREE, cult. and sometimes naturalized; and C. AMERICANUS Nutt., AMERICAN SMOKETREE, occurring in Growth Regions 16, 17, 20, 25 and 29.

Cercospora rhoina Cke. & Ell., leaf spot. Ala.
Pezizella oenotherae Cke. & Ell. (Hainesia rhoina (Sacc.) Ell. & ... Sacc.), leaf spot. N. J.
Septoria rhoina Sacc., leaf spot. Northeastern States.
Verticillium albo-atrum Reinke & Bert, wilt. Ill., N. J., N. Y.

COTONEASTER (ROSACEAE)

COTONEASTER spp. Ornamental shrubs of temperate parts of Europe and Asia widely cult. in zones of intermediate hardiness throughout the U. S.

Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Erwinia amylovora (Burr.) Winslow, fire blight. Widespread.
Fabraea maculata Atk. (Entomosporium maculatum Lév.), leaf spot. Calif.
Gibberella baccata (Wallr.) Sacc. (Fusarium lateritium Nees), on twigs. Calif.
Nectria cinnabarina Tode ex Fr. (Tubercularia vulgaris Tode), on twigs. Conn.
Phyllosticta cotoneastri Allesch., leaf spot. Md. P. cydoniae (Desm.) Sacc. Miss.

COTONEASTER--Continued

Phymatotrichum omnivorum (Shear) Dug., root rot. Ariz., Texas.
Physalospora obtusa (Schw.) Cke., canker, twig blight. N.Y. to Ohio and Texas.
Phytomonas rhizogenes Riker et al., hairy root. Central States.
Venturia sp., scab. Wash.

COURSETIA (LEGUMINOSAE)

COURSETIA spp. Shrubs or small trees of southwestern U. S.
Phragmopyxis acuminata (Long.) Syd., rust (0,III). Calif., Ariz.

COVILLEA (ZYGOPHYLLACEAE)

COVILLEA TRIDENTATA (DC.) Vail, CREOSOTE BUSH. Shrub of Growth Regions 9, 10, 11, 16, 17.

Phoradendron californicum Nutt., mistletoe. Texas to Calif.

COWANIA (RUBIACEAE)

COWANIA spp. Shrubs of Growth Regions 9, 10, 11, 13, 14, 17.

Phragmidium andersoni Shear, rust (I,II,III). Idaho.

CRATAEGUS (ROSACEAE)

CRATAEGUS spp., HAWTHORN. Shrubs and small trees occurring in great diversity throughout the U.S.; some of the native spp. are cult., but the most important horticultural forms belong to C. MONOGYNA Jacqu. and C. OXYACANTHA L., the ENGLISH HAWTHORNS. C. pyracantha Bork.= Pyracantha coccinea Roem.; C. lalandii Hort.= P. coccinea var. lalandii Dipp.

Armillaria mellea Vahl ex Fr., root rot. Okla.
Botryosphaeria melathroa Berk. & Curt. and (=?) B. ribis Gross. & Dug., on dead branches. Md.,Pa.
Botrytis cinerea Pers., fruit rot. Mass.
Cenangium crataegi Schw., on branches. Pa.
Cercospora confluens Lieneman (C. crataegi Heald & Wolf) and C. apiifoliae Tharp, leaf spot. Texas.
Cercosporella mirabilis Pk., leafspot. Colo., N.Y., Wis.
Cornularia harpographoides Dearn., on branches. Mich.

CRATAEGUS spp. --Continued

Cucurbitaria crataegi (Schw.) Ell. & Ev., on branches. Mich., Pa., N. Dak. (C. crataegi Niessl has priority.)
Cylindrosporium brevispina Dearn., leaf spot. Calif. to Mont. and Wash.; C. crataegi Ell. & Ev., W.Va.
Cytospora microspora (Cde.) Rabh., on twigs. Mich., N.J.
Dermatea crataegicola Durand, on dead branches. Iowa.
Daedalea confragosa Bolt. ex Fr., wood rot. Cosmopolitan.
(Entomosporium maculatum Lév., E. thuemenii (Cke.) Sacc.): Fabraea maculata.
Erwinia amylovora (Burr.) Winslow, fire blight (especially on English hawthorns). Widespread.
Fabraea maculata Atk., leaf blight. Eastern and Central States southward.
Fomes applanatus Pers. ex Wallr., white heart rot, butt rot. Calif., Mich.
Fomes spp., wood rot. Occasional. (F. conchatus Pers. ex Gill.; Mich., N. Dak.; F. langloisii (Murr.) Sacc. & D. Sacc., La.; F. pini (Thore ex Fr.) Karst., Colo., Mont.; F. pomaceus Pers. ex Lloyd, Mich.
(Fusicladium dendriticum (Wallr.) Fckl.) : Venturia inaequalis.
Gloeodes pomigena (Schw.) Colby, on twigs. Ind.
Gloeosporium crataegi Dearn. & Barth., leaf spot. Wash.
(G. crataegi Hollos has priority.)
Glomerella cingulata (Ston.) Spauld. & Schrenk., on fruit. Md.
Gymnosporangium betheli Kern, rust (0,I) on fruits. N. Dak. to Wash., Colo and N. Mex. III on Juniperus spp.
G. clavipes Cke. & Pk., quince rust (0,I) on fruits and stems. General east of Rocky Mts. III on Juniperus spp., especially J. communis L. and J. virginiana L.
G. exiguum Kern., rust (0,I) on leaves and fruits. Texas. III on Juniperus spp.
G. floriforme Thaxt., rust (0,I) on leaves. S. Car. to Fla., Okla. and Texas. III on Juniperus virginiana L.
G. globosum Farl., hawthorn rust (0,I) on leaves. Me. to N. Dak., Ga. and Texas. III on Juniperus spp., especially J. virginiana L.
G. hyalinum (Cke.) Kern, rust (0,I) on leaves. Atlantic Coast, N. Car. to Fla. III unknown.
G. libocedri (P. Henn.) Kern, rust (0,I) on leaves and fruit. Pacific Coast, Oreg. and Calif. III on Libocedrus decurrens Torr.
G. nelsoni Arth., rust (0,I) on leaves and fruits. Wyo. III on Juniperus spp.
G. trachysorum Kern, rust (0,I) on leaves. Atlantic and Gulf Coasts, Pa. to La. III on Juniperus virginiana L.
G. tubulatum Kern, rust (0,I) on leaves. Northern Rocky Mts. to Oreg. and Wash.
Hendersonia crataegicola Atk., leaf spot. Ala., Texas; H. crataegi Brenckle, N. Dak.
Hirudinaria macrocarpa Ces., on leaves. Ill., S. Car.
(Monilia crataegi Died.) : Sclerotinia johnsonii.
Otthia crataegi Fckl., on branches. N. Dak.
(Phleospora crataegi Davis and P. oxyacanthae Ell. ex Davis not (Kze. & Schm.) Wallr.) : Cercosporella mirabilis Pk.

CRATAEGUS spp.--Continued

Phoma leprosa Pk., on fruit. N. Y.
Phoradendron flavescens Nutt., mistletoe. Texas.
Phyllactinia corylea Pers. ex Karst., powdery mildew. General
Phyllosticta spp., leaf spots. Widespread. (P. crataegi (Cke.) Sacc., N.Y. to N. Dak., S. Car. and N. Mex.; P. crataegicola Sacc., Colo., N. Dak.; P. grisea Pk., N.Y.; P. rubra Pk., N.Y. to W. Va. and Kans.; P. solitaria Ell. & Ev., N.J., Ill.)
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora obtusa (Schw.) Cke., on branches. Eastern and Central States.
Podosphaera oxyacanthae (DC.) DBy. , powdery mildew. Eastern and Central States southward.
Polyporus gilvus (Schw.) Fr.,woodrot. Lower Mississippi Valley .
P. versicolor L. ex Fr., wood rot, sometimes on living trees. Cosmopolitan.
Sclerotinia johnsonii (Ell. & Ev.) Rehm (S. crataegi Magn.), leaf blight and fruit rot. N.Y. to Minn.
Sclerotium rolfsii Sacc., seedling blight. Fla.
Septobasidium spp., especially S. curtisii (Berk. & Desm.) Boed. & Stein, and S. pseudopedicellatum Burt., felt fungus. Southeastern and Gulf States.
Septoria crataegi Kickx., leaf spot. Mich. to N. Dak.
Sphaeronema longirostre Clem., on branches. Nebr.
Sphaeropsis foliicola Berl. & Roum., on leaves. N.Y.
Sporodesmium quadretum Atk., on leaves. Ala.
Stemphylium crataegi (Ell. & Ev.) Höhn., on leaves. N.J.
Valsa ambiens Pers. ex Fr., on twigs. Widespread.
Venturia inaequalis (Wallr.) Fckl., scab. Widespread.
Xylaria hypoxylon (L.) Grev., root rot. Ind., Ohio.

CRYPTOCARYA (LAURACEAE)

CRYPTOCARYA spp. Trees of the southern hemisphere, occasionally cult. in southern U.S.

Meliola cookeana Speg., black mildew. Tropical America.
M. peleae F. L. Stevens. T.H.

CRYPTOMERIA (PINACEAE).

CRYPTOMERIA JAPONICA (L.f.) D. Don, CRYPTOMERIA. Evergreen tree of Japan, cult. in zones of intermediate hardiness.

Diaporthe eres Nit. (Phomopsis occulta Trav.), on twigs. N.Y.
Pestalotia (Pestalozzia) cryptomeriae Cke., on needles. S.Car.; P. funerea Desm., N. J.
(Phomopsis occulta Trav.) : Diaporthe eres Nit.

CUPANIA (SAPINDACEAE)

CUPANIA spp. Trees and shrubs of tropical America.

Cephaleuros virescens Kze., algal spot. P.R.
Irenopsis cupaniae F. L. Stevens, black mildew. P.R.
Meliola praetervisa Gaill. and M. thouiniae Earle, black mildew. P. R.

CUPRESSUS (PINACEAE)

CUPRESSUS spp., CYPRESS. Evergreen trees, native in southwestern U.S., and Mexico, cult. as ornamentals; also several European and Asiatic spp., cult. in the far South.

Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Coryneum cardinale Wagener, canker. Calif.
(Chiefly on planted trees, but not the native groves of C. macrocarpa Gord., to which the disease is fatal; occasionally on planted trees of several other native spp., and on C. sempervirens L., other native spp. are resistant.)
Lenzites saepiaria Wulf. ex Fr., wood rot. Cosmopolitan.
Lophodermium sp., needle cast. N.J.
Pestalotia (Pestalozzia) funerea Desm., ?twig blight or sapr. Calif., Fla., Texas.
Phomopsis juniperovora Hahn, nursery blight. Eastern and Southeastern States to Texas. (Attacks all cultivated spp.)
Phoradendron pauciflorum Torr., mistletoe. Ariz., Calif.
Phymatotrichym omnivorum (Shear) Dug., root rot. Ariz., Texas.
Phytomonas tumefaciens (EFS.) Bergey, crown gall. Ariz., Calif., Fla.
Polyporus versicolor L. ex Fr., wound rot. Cosmopolitan.

CUPRESSUS ARIZONICA Greene (including var. BONITA Lemm.= C. glabra Sudw.), ARIZONA CYPRESS. Growth Regions 11,14; also cult.

Gymnosporangium cupressi Long. & Good., rust (III). Ariz. 0 and I on Amelanchier mormonica.
Phomopsis juniperovora Hahn, nursery blight. Texas.
Phytomonas tumefaciens (EFS.) Bergey, root galls. Ariz.

CUPRESSUS MACROCARPA Hartw. ex Gord., MONTEREY CYPRESS. Growth Region 5.

Coryneum cardinale Wagener, canker. Calif.
Diplodia cyparissa Cke. & Harkn. on branches. Calif.
Hydnum ochraceum Pers. ex Fr., wound rot. Calif.
Polyporus carbonarius Murr., wood rot. Calif.
P. cutifractus Murr., on living trees. Calif.
Sphaeropsis cupressi Cke. & Harkn., dieback. Calif.

CUPRESSUS SEMPERVIRENS L., ITALIAN CYPRESS. Cult. in the far South and Calif., especially the var. STRICTA Ait.

Coryneum berkmanii Milbrath, twig blight. Oreg.
C. cardinale Wagener, canker. Calif.
Diaporthe eres Nit., on twigs. Texas.
Fusarium solani (Mart.) App. & Wr., seedling blight. Texas.
Macrophoma cupressi Berl. & Vogl., dieback. Fla., Texas.
Phomatospora cupressina Langl. (?Physalospora), on branches. La.
Phomopsis juniperovora Hahn, nurseryblight. Texas.
P. occulta Trav., on twigs following environmental injury.

CYCAS (CYCADACEAE)

CYCAS spp., chiefly C. CIRCINALIS L., FERN-PALM and C. REVOLUTA Thunb., SAGO-PALM. Cult. under glass and in open in far South.

Ascochyta cycadina Scalia, leaf spot. Mo., Texas.
Anabaena cycadearum Yoshimura, coraloid roots (endophytic alga). Fla.
Leptosphaeria irrepta Niessl , on leaves. Ind.
Pestalotia (Pestalozzia) cycadis Allesch., on leaves. Canal Zone.
Phoma bresadolae Sacc., on leaves. Miss.

CYDISTA (BIGNONIACEAE).

CYDISTA AEQUINOCTIALIS (L.) Miers. Woody climber of Tropical America.

Meliola cydistae F.L. Stevens, black mildew. Canal Zone.
Prospodium aequinoctialis (Holw.) Cumm., rust (II, ?III). P. R.
Cephaleuros virescens Kze., algal spot. P. R.

CYDONIA (ROSACEAE)

CYDONIA JAPONICA Pers. (CHAENOMELES LAGENARIA (Loisel.) Koidz.) and C. MAULEI T. Moore (CHAENOMELES JAPONICA (Thunb.) Lindl.), FLOWERING QUINCES. Ornamental shrubs, respectively of China and Japan, widely cult. in intermediate and hardy zones of the U. S. (Standardized Plant Names, ed. 1924, is followed, though most authorities now place the flowering quinces in Chaenomeles.)

Botryosphaeria ribis Gross. & Dug. (Dothiorella ribis twig blight. Texas.
Cercospora cydoniae Ell. & Ev., leaf spot. Ala.
Coryneum cydoniae Dearn. & House, on branches. N.Y.
(Entomosporium maculatum Lév.): Fabraea maculata
Erwinia amylovora (Burr.) Winslow, fire blight. Occasional.

CYDONIA JAPONICA Pers.--Continued

Fabraea maculata Atk., leaf blight. Ala.,Conn., N. Y.
Gymnosporangium clavipes Cke. & Pk., "quince" rust. (0,I) on stems. N.J. (III on Juniperus spp.)
G. libocedri (P. Henn.) Kern, rust (0,I) on leaves. Oreg. (III on Libocedrus decurrens.)
Heterodera marioni (Cornu) Goodey, root knot. Texas.
Nectria cinnabarina Tode ex Fr. (Tubercularia vulgaris Tode), on branches. Calif.
Phoma sp., canker, twig blight. Md., Texas.
Phyllosticta sp., on leaves. Mo., Nebr.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora obtusa (Schw.) Cke., canker, twig blight. Eastern States. Texas.
Phytomonas tumefaciens (EFS.) Bergey, crown gall. Occasionl.
Sclerotinia fructicola (Wint.) Rehm., brown rot leaf blight. Mich.
S. laxa (Aderh.) Ruhl., brown rot twig blight, blossom blight. Calif.
Septobasidium burtii Lloyd, felt fungus. Miss.

CYDONIA OBLONGA MILL., QUINCE. Cult. throughout the U. S. in zones of intermediate hardiness.

Alternaria mali Roberts, fruit rot. Ind.
Botryosphaeria ribis Gross. & Dug. (Dothiorella ribis twig blight. Texas.
Botrytis cinerea Pers., gray-mold rot (fruit). Occasional.
Cephalosporium roseum Cda., pink-mold rot (fruit). Occasional.
Coniothyrium pyrina (Sacc.) Sheld., on leaves. W. Va.
Corticium koleroga (Cke.) Höhn. (C. stevensii Burt.), thread blight (leaves). N. Car., Gulf States.
(Cylindrosporium pomi (Pass.) Brooks) : Mycosphaerella pomi.
(Entomosporium maculatum Lév.): Fabraea maculata
Erwinia amylovora (Burr.) Winslow, fire blight. General
Fabraea maculata Atk., leaf blight, black spot (fruit). General
(Fusicladium pirinum (Lib.) Fckl.): Venturia pirina.
Glomerella cingulata (Ston.) Spauld. & Schrenk, bitter rot, canker. Eastern and Central States southward.
Gymnosporangium clavariaeforme (Jacq.) DC., rust (0,I) on leaves, fruits & stems. Conn., Me., N.H. (III on Juniperus spp.)
G. clavipes Cke. & Pk., orange rust, "quince" rust (0,I) on fruits & stems. Eastern and Central States to Ala and Texas. (III on Juniperus spp.)
G. libocedri (P. Henn.) Kern, rust (0,I) on fruits & stems. Oreg. (III on Libocedrus decurrens.)
G. nelsoni Arth., rust (0,I) on leaves & stems. Ariz., Colo. (III on Juniperus spp.)
G. nidus-avis Thaxt., rust (0,I) on leaves, fruits & stems. Conn., N.Y. (III on Juniperus virginiana.)
(Gloeosporium fructigenum Berk., G. rufomaculans (Berk.) Thuem.): Glomerella cingulata.
(G. perennans Zeller & Childs): Neofabraea perennans.

CYDONIA OBLONGA--Continued

Hendersonia cydoniae Cke. & Ell., on leaves. Conn., N.J.
Heterodera marioni (Cornu) Goodey, root knot. Texas
Leptothyrium pomi (Mont. & Fr.) Sacc., fruit spot. Mo.
Mycosphaerella pomi (Pass.) Lindau, fruit spot. New England to Ohio.
Nectria cinnabarina Tode ex Fr., on branches. N. H., Wash.
N. galligena Bres., trunk canker. Oreg.
Neofabraea malicorticis (Cordley) Jacks., anthracnose (fruit). Ore., Wash.
N. perennans (Zeller & Childs) Kienholz, perennial canker. Oreg.
Penicillium expansum Link ex Thom, blue-mold rot. Cosmopolitan.
Phoma cydoniae Sacc. & Schulz., pale rot (fruit), Ill., Mich.
P. mali Schulz. & Sacc., fruit rot. Ind.
(P. pomi Pass.); Mycosphaerella pomi.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Va.
Phyllosticta sp., leaf spot. Del.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora obtusa (Schw.) Cke. (P. cydoniae Arn.), black rot (fruit), canker, leaf spot. Eastern and Central States to Ala. and Texas.
Phytomonas tumefaciens (EFS,) Bergey, crown gall. Widespread.
P. rhizogenes Riker et al., hairy root. Md. to N. Car., Pacific Coast States. Burr knots, said to be non-parasitic, have been reported in Miss., Oreg., and Wash.
Podosphaera leucotricha (Ell. & Ev.) Salm., powdery mildew. Calif., Wash., P. oxyacanthae (DC.) DBy., N. Y. and W. Va. to Ind.
Sclerotinia fructicola (Wint.) Rehm, brown rot (fruit). Eastern States, Miss., Oreg.
S. laxa (Aderh.) Ruhl., brown rot twig blight. Pacific Coast States.
(Sphaeropsis cydoniae Cke. & Ell.): Physalospora obtusa.
Valsa leucostoma Pers. ex Fr., canker, twig blight.
Venturia pirina Aderh., scab. Conn.

CYDONIA SINENSIS Thouin (CHAENOMELES SINENSIS (Thouin) Koehne), CHINESE QUINCE. Native of China, occasionally cult. for fruit and as ornamental.
Erwinia amylovora (Burr.) Winslow, fireblight. N.Y.

CYRILLA (CYRILLACEAE)

CYRILLA RACEMIFLORA L., CYRILLA, SWAMP IRONWOOD. Shrub or small tree in Growth Regions 28, 29,30.

Aecidium cyrillae Arth., rust (0,I). La., Miss.
Botryosphaeria abrupta Berk. & Curt., on twigs. N.C.
Lophodermium cyrillicola Tr. & Earle, on leaves. Ala., Miss.
Phyllosticta cyrillae Ell. & Mart., on leaves. Fla.

CYTISUS (LEGUMINOSAE)

CYTISUS spp., broom. European shrubs, cult. as ornamentals. C. scoparius (L.) Link, SCOTCH BROOM, has become naturalized in Growth Regions 1,2,4,27,28,29; valuable for erosion control.

Ceratophorum setosum Kirch. (? Camarosporium laburni Sacc., conidial stage of Cucurbitaria laburni (Pers.) Cos. & DeNot.)
(Cylindrocarpon candidum (Lk.) Wr.): Nectria coccinea Pers. ex Fr.
Diaporthe spp. (D. inaequalis (Curr.) Nit., D. rudis (Fr.) Nit.= D. medusaea Nit., and D. sarothamni (Auer.) Nit.), on dead branches. N.J., N.Y.
Dothidea tetraspora Berk. & Br., on dead branches. Calif.
Gloeosporium ? garganicum Sacc. & D. Sacc., on branches. N.J.
Nectria coccinea Pers. ex Fr., on branches. Oreg.
Pestalotia (Pestalozzia) polychaetia Cke. & Harkn., on twigs. Calif.
Phomopsis sp., on branches. Mass., N.J.
Physalospora obtusa (Schw.) Cke., on branches. Ala.

(Division of Mycology and Disease Survey, Bureau of Plant Industry).

NEW REPORTS ON ADELOPUS GÄUMANNI ON DOUGLAS FIR IN THE UNITED STATES

Glenn Gardner Hahn

Since the discovery and identification of the needle cast of planted Douglas fir (Pseudotsuga taxifolia (Poir.) Rehd.) associated with Adelopus gäumanni Rohde (Phaeocryptopus gäumanni (Rohde) Petrak) in Connecticut,[1] and the critical discussion by Boyce[2] of this new and destructive disease in Europe including its known distribution in this country, the attributed causal organism has been found in many additional localities in the United States.[3] [Footnotes at end of article.]

In New England,[4] where according to Boyce damage by the fungus is about equal to that in some of the less severely infected but still damaged stands in southern Germany and Switzerland, the following new localities for Adelopus gäumanni growing in green needles of the mountain form of Douglas fir were found [5]. In Connecticut, the fungus was collected in the White Memorial Plantations near Litchfield by J. R. Wood, J. R. Hansbrough, and the writer. Previous observations had not revealed the presence of the parasite in that locality. Hahn and C. K. Goodling, continuing their studies of planted Douglas fir on Mt. Desert Island and elsewhere in Maine, found the organism on abandoned nursery trees growing at Ellsworth. Hansbrough discovered the fungus in a Douglas fir plantation at Groton, Massachusetts, and in a vigorous, young plantation that had been established at Plainfield, New Hampshire, with seed collected at Olympia, Washington.

Previous preliminary surveys of a plantation near Old Chatham, New York, of very vigorous Douglas firs which evidenced characters suggestive of both the coast and intermountain growth forms had not revealed the presence of Adelopus gäumanni. However, in October 1940, after a thorough examination by Wood, Hansbrough, and Hahn, a very scant infection of the parasite was discovered on 1936, 1937, and 1938 needles. This collection of A. gäumanni on Douglas firs is the first in New York State known to the writer.

Boyce's statement would appear to hold concerning the general distribution of Adelopus gäumanni as a noninjurious fungus within the natural range of Douglas fir in northwestern North America. In 1940 the writer studied material of A. gäumanni collected on native and planted stock in the Northwest by T. W. Childs and E. H. Tryon. The fungus was collected in Washington near Quilcano, Jefferson County and Carson, Skamania County. In Oregon, it was taken in the following localities: Hebo, Tillamook County (previously reported by E. P. Meinecke); Dolph, Yamhill County; Rhododendron, Clackamas County; and Corvallis, Benton County. These localities are all west of the crest of the Cascade Mountains. In a report on the occurrence of A. gäumanni on the Pacific Coast, Meinecke[6] stated that as far as known the fungus is not found at all east of that mountain range.

Information on the occurrence of Adelopus gäumanni in California has been exceedingly scant. According to our most recent records the species occurs sparingly on native Douglas fir in that State. During 1940 the writer studied collections made by J. L. Mielke in the following 5 localities near the Pacific Coast north of Fort Bragg, and in Shasta County: Fort Bragg, Cummings, Willow Creek (along U. S. highway 229), the summit between Blue Lake and Redwood Creek (U. S. highway 299), and Bayles (along the road to Trinity Center).

In New Mexico[7], however, Adelopus gäumanni occurs abundantly and has manifested a degree of parasitism in certain localities that is characteristic of the role played by the organism in European and New England plantations. Collections made by members of the Division of Forest Pathology at Albuquerque, partly in 1939 but mostly in 1940, have been studied by the writer from the following localities: Lincoln National Forest--Sacramento Mountains (Cloudcroft and Bear Canyon); White Mountain (Eagle Creek, Little Creek, Ruidosa, Monjean Lookout Road, and Alto). According to a 1940 survey report by J. S. Hall[8], formerly of the Albuquerque Office, who made a large number of Adelopus collections in the Lincoln National Forest for study at New Haven, A. gäumanni was found in the mountain ranges extending the length of the State (Sangre de Cristo, Jemez, Sandia and Manzano, Gallinas, Patos, Carrizo, Tucson, Capitan, White Mountain, Sacramento, and Guadalupe). It was found also in the Mogollon Mountains in southwestern New Mexico. The heaviest defoliation was observed in the Sacramento Mountains in the southern part of the State.

Adelopus gäumanni moreover was discovered elsewhere in the Southwest in the following localities in Arizona. In May 1939, D. E. Ellis collected it in the Coconino National Forest from Baker's Butte, and in April of 1940, W. W. Wagener and L. S. Gill found the organism in the

Coronado National Forest in the Chiricahua Mountains. In the case of the latter collection, no defoliation of Douglas fir was reported. Data, however, on the occurrence of A. gäumanni in the Northern Rockies (Colorado) is lacking at the present time.

Notes and References:

1. McCormick, F. A. Phaeocryptopus gäumanni on Douglas fir in Connecticut. Plant Disease Reporter 23: 368-369. 1939.

2. Boyce, J. S. A needle-cast of Douglas fir associated with Adelopus gäumanni. Phytopathology 30: 649-659. 1940.

3. Acknowledgment is due members of the Division of Forest Pathology, for rendering every possible assistance in obtaining field material for a mycological and physiological investigation of Adelopus gäumanni being conducted at New Haven, Connecticut.

4. F. A. McCormick in 1939 reported infection sites of Adelopus gäumanni in Connecticut. J. S. Boyce shortly thereafter summarized the then known collection sites for all of New England. These northeastern localities are itemized as follows: Connecticut (northern part of the State)--East Willington, Eastford, Taconic, Salisbury, Lakeville, and Sharon; Rhode Island--Goddard Memorial Park, Warwick; Massachusetts--Hamilton and Petersham; Vermont--Springfield and Sharon; New Hampshire--Holderness, Dover, and Chester; and Maine--Bar Harbor and Northeast Harbor on Mt. Desert Island.

5. For a discussion of growth forms or varieties of Douglas fir see p. 651 of article cited in footnote 2, above.

6. Meinecke, E. P. The Adelopus needle-cast of Douglas fir on the Pacific Coast, 5 pp. (mimeo.) Dept. Nat. Resources. Div. Forestry, Sacramento, Calif., 1939.

7. Gill, L. S. Unpublished report, Division of Forest Pathology. Observations on Adelopus in the Lincoln National Forest in 1939. 3 pp. (typewritten) Oct. 11, 1939. , Albuquerque.

8. Hall, J. S. Unpublished report, Division of Forest Pathology. Report of the 1940 survey and field studies of Adelopus sp. on Pseudotsuga taxifolia in New Mexico. 28 pp. (typewritten)June 29, 1940. Albuquerque.

(Division of Forest Pathology, Bureau of Plant Industry, cooperating with The Osborn Botanical Laboratory, Yale University, New Haven, Connecticut).

LITTLE-LEAF DISEASE OF SHORTLEAF AND OTHER SOUTHERN PINES

E. Richard Toole and Thomas S. Buchanan

A deterioration and dying of shortleaf [Pinus echinata Mill.], and to a lesser extent other southern pines, is under investigation in the South. The condition is characterized by very short branch and twig internodes, on which the foliage is very scant and confined to the extremities. Additional symptoms, usually but not always present, are chlorosis

Figure 1.
Distribution of the little-leaf disease of pines as determined by roadside surveys up to January 1941

and reduction in length of needles, marked reduction in radial growth of the stem, and a tendency of the crown to die progressively from the bottom upward. Very young trees show none of these symptoms and only pole-size and larger trees are severely affected. In addition to shortleaf, an occasional loblolly, [P. taeda L.], longleaf [P. australis Michx.] or Virginia pine [P. virginiana Mill.] may also show characteristic little-leaf symptoms.

The known distribution of little-leaf is spotty but, in general, extends in a cresent shaped belt from central Virginia south through western North and South Carolina and thence westerly across north central Georgia and Alabama to northeastern Mississippi. A very small area with trees having little-leaf symptoms has been seen near Norris, Tennessee, and typical symptoms have been reported from Cherokee County, Texas (see figure 1).

In some localities the actual or expected mortality has become sufficient to warrant rather heavier than normal cutting of shortleaf pine. Similarly, certain agencies are beginning to question the advisability of continuing to use shortleaf pine in their planting programs within the range of the disease.

The cause of little-leaf is not known, but detailed investigations are under way. Men assigned to this problem are stationed at and cooperate with the Alabama Polytechnic Institute, the University of Georgia, and the Appalachian Forest Experiment Station.

(Division of Forest Pathology, Bureau of Plant Industry.)

AN OUTBREAK OF CABBAGE BLACK SPOT DISEASE IN THE LOWER RIO GRANDE VALLEY OF TEXAS

G. H. Godfrey

Alternaria brassicae, (Berk.) Sacc., for the first time in ths history of cabbage culture in the Lower Rio Grande Valley of Texas, has this year been exceedingly serious. Yields of only 3 tons per acre and sometimes even less, have been taken from fields from which 15 tons might normally have been taken. One grower reports from one field a loss of $5,000 below the expected based on last year's returns. Cabbage prices have been high--$20 to $35 a ton--so losses in yield have been hard to take. One shipper today (February 11) reported that he had turned down an entire truck load because practically every head showed heavily spotted wrapper leaves.

This disease has been observed in mild form every year for the past 4 years. This year, with rainfall 5.27 inches above normal in December, and 5.23 above normal in January, infection became heavy unusually early in the season, with the early maturing varieties showing heavy wrapper-leaf infections.

All varieties in a Station sponsored variety test block showed infection, but variety differences were rather pronounced. Based on individual plant records on from 100 to 600 plants of each variety, recordings were made as follows:

Rating	Variety	Range	Average
1	Allhead Select	50-80	68
2	Wisconsin Allseason	20-80	68
3	Globe	30-90	67
4	Penn State Ballhead	30-80	66
5	Midseason Market	10-80	60
6	Marion Market	30-80	59
7	Hollander	30-80	58
8	Round Dutch	0-80	42

Anything below 60 was distinctly unmarketable. Even 70 was questionable because of the occurrence of a few infection specks on wrapper leaves; 80 had wrapper leaves clean, with outer leaves considerably spotted; 90 showed lower outer leaves spotted, as in a normal year late in the season.

(Texas Agricultural Experiment Station, Substation No. 15.)

GRASS DISEASES IN MICHIGAN IN 1940

John R. Hardison

This report is based principally on a row by row check up for grass diseases in the writer's grass disease nursery. New hosts are reported for certain diseases. It is interesting to note that the disease, "Bends", formerly referred to as "Hairpin Disease", is recorded herein for Michigan. This disease, previously known only in the Pacific Northwest, was first observed by Dr. G. W. Fischer in Washington[1]. Stem rust, (Puccinia graminis) is reported on Hordeum bulbosum (Soil Conservation Service Accession 306-39P). This grass has previously been disease-free in the Soil Conservation Service nurseries at Pullman, Washington.

The writer is indebted especially to Dr. G. W. Fischer and the Pullman Nursery Unit of the Soil Conservation Service for supplying seed from which most of the grasses reported herein were grown. Also acknowledgment is made to Mr. John L. Schwendiman for checking the nomenclature and accession numbers of the Soil Conservation Service grasses, to Dr. G. W. Fischer for checking the pathogen index, and to Dr. E. B. Mains for identification of certain rust fungi and for helpful suggestions.

HOST INDEX

Aegilops cylindrica Host
Stem rust, Puccinia graminis
Leaf rust, Puccinia rubigo-vera

Agropyron caninum (L.) Beauv.
Ergot, Claviceps purpurea

Agropyron cristatum (L.) Gaertn.
Leaf rust, Puccinia rubigo-vera

Agropyron inerme (Scribn. and Smith) Rydb.
Leaf rust, Puccinia rubigo-vera

Agropyron inerme(Scribn. and Smith) Rydb.--continued.
Leaf spot, Helminthosporium sp.
Leaf spot, cause undetermined
Stem rust, Puccinia graminis

Agropyron pauciflorum (Schwein.) Hitchc.
Leaf spot, cause undetermined
Stem rust, Puccinia graminis

Agropyron repens (L.) Beauv.
Leaf rust, Puccinia rubigo-vera
Stem rust, Puccinia graminis

Agropyron semicostatum (Steud.) Nees ex Boiss.
Leaf spot, cause undetermined

Agropyron sibiricum (Willd.) Beauv.
Ergot, Claviceps purpurea
Leaf rust, Puccinia rubigo-vera
Leaf spot, cause undetermined

Agropyron smithii Rydb.
Leaf rust, Puccinia rubigo-vera

Agropyron spicatum (Pursh) Scribn. and Smith
Leaf rust, Puccinia rubigo-vera
Leaf spot, cause undetermined
Stem rust, Puccinia graminis

Agropyron striatum (Steud.) Nees ex Hook.
Stem rust, Puccinia graminis

Agropyron subsecundum (Link.)Hitchc.
Leaf spot, cause undetermined
Stem rust, Puccinia graminis

Agrostis alba L.
Leaf rust, Puccinia rubigo-vera
Stem rust, Puccinia graminis

Agrostis exarata Trin.
Stem rust, Puccinia graminis

Agrostis palustris Huds.
Leaf spot, Helminthosporium sp.

Beckmannia erucaeformis (L.) Host
Leaf spot, Helminthosporium sp.

Beckmannia syzigachne (Steud.) Fern.
Leaf spot, cause undetermined

Bromus anomalus Rupr.
Crown rust, Puccinia coronata
Head smut, Ustilago bullata

Bromus brizaeformis Fisch. and Mey.
Crown rust, Puccinia coronata
Bends (Hairpin disease), cause undetermined

Bromus ciliatus L.
Crown rust, Puccinia coronata

Bromus marginatus Nees
Crown rust, Puccinia coronata
Leaf spot, cause undetermined
Leaf spot, Helminthosporium sp.

Bromus pacificus Shear
Crown rust, Puccinia coronata

Bromus polyanthus Scribn.
Crown rust, Puccinia coronata

Bromus purgans L.
Crown rust, Puccinia coronata

Calamagrostis canadensis (Michx.) Beauv.
Leaf rust, Puccinia pygmaea

Dactylis glomerata L.
Ergot, Claviceps purpurea
Leaf spot, Scolecotrichum graminis
Powdery mildew, Erysiphe graminis
Stem rust, Puccinia graminis

Deschampsia caespitosa (L.) Beauv.
Stem rust, Puccinia graminis

Elymus [virginicus var.] australis [(Scribn. and Ball) Hitchc.]
Leaf rust, Puccinia rubigo-vera
Leaf spot, cause undetermined
Stem rust, Puccinia graminis

Elymus canadensis L.
Crown rust, Puccinia coronata
Leaf rust, Puccinia rubigo-vera
Stem rust, Puccinia graminis
Brown stripe rust, Puccinia montanensis

Elymus condensatus Presl
Leaf spot, Helminthosporium sp.
Stem rust, Puccinia graminis

Elymus dahuricus Turcz.
Crown rust, Puccinia coronata
Powdery mildew, Erysiphe graminis

Elymus glaucus Buckl.
Leaf rust, Puccinia rubigo-vera
Stem rust, Puccinia graminis

Elymus junceus Fisch.
Leaf rust, Puccinia rubigo-vera
Stem rust, Puccinia graminis

Elymus [canadensis var.] robustus [Scribn. and Smith) Makenz. and Bush]
Crown rust, Puccinia coronata

Elymus sibiricus L.
Stem rust, Puccinia graminis

Elymus triticoides Buckl.
Crown rust, Puccinia coronata
Leaf spot, cause undetermined
Powdery mildew, Erysiphe graminis

Elymus villosus Muhl. ex Willd.
Leaf spot, Helminthosporium sp.

Elymus virginicus L.
Crown rust, Puccinia coronata
Leaf spot, cause undetermined
Stem rust, Puccinia graminis

Festuca elatior L.
Leaf spot, Helminthosporium sp.

Festuca elatior var. arundinacea (Schreb.) Wimm.
Bends (Hairpin Disease), cause undetermined

Festuca rubra L.
Powdery mildew, Erysiphe graminis

Hordeum bulbosum L.
Stem rust, Puccinia graminis, with parasite, Darluca filum

Hordeum jubatum L.
Leaf rust, Puccinia rubigo-vera
Stem rust, Puccinia graminis

Hordeum jubatum var. caespitosum (Scribn.) Hitchc.
Stem rust, Puccinia graminis

Hordeum nodosum L.
Stem rust, Puccinia graminis

Koeleria cristata (L.) Pers.
Stem rust, Puccinia graminis

Millium effusum L.
Powdery mildew, Erysiphe graminis
Stem rust, Puccinia graminis

Phleum pratense L.
Stem rust, Puccinia graminis

Poa ampla Merr.
Leaf rust, Puccinia poae-sudeticae
Leaf spot, Helminthosporium sp.
Stem rust, Puccinia graminis

Poa arctica R. Br.
Stem rust, Puccinia graminis

Poa canbyi (Scribn.) Piper
Leaf rust, Puccinia poae sudeticae
Leaf spot, cause undetermined
Stem rust, Puccinia graminis

Poa compressa L.
Leaf rust, Puccinia poae-sudeticae
Leaf spot, Scolecotrichum graminis
Stem rust, Puccinia graminis

Poa curta Rydb.
Leaf spot, cause undetermined

Poa cusickii Vasey
Leaf spot, cause undetermined

Poa juncifolia Scribn.
Stem rust, Puccinia graminis

Poa nevadensis Vasey
Leaf spot, cause undetermined
Leaf spot, Helminthosporium sp.
Leaf spot, Scolecotrichum graminis
Stem rust, Puccinia graminis

Poa palustris L.
Leaf rust, Puccinia poae-sudeticae with parasite, Darluca filum

Poa pratensis L.
Leaf rust, Puccinia poae-sudeticae
Leaf spot, Helminthosporium vagans
Powdery mildew, Erysiphe graminis

Poa secunda Presl
Leaf spot, cause undetermined
Leaf rust, Puccinia poae-sudeticae with parasite, Darluca filum

Poa palustris L.
Leaf rust, Puccinia poae-sudeticae with parasite, Darluca filum

Poa sphondylcides Trin.
Powdery mildew, Erysiphe graminis

Setaria lutescens (Weigel) F. T. Hubb.
Bends (Hairpin Disease), cause undetermined
Head smut, Ustilago neglecta

Sitanion hystrix (Nutt.) J. G. Smith
Leaf rust, Puccinia rubigo-vera
Stem rust, Puccinia graminis

Sitanion jubatum J. G. Smith
Leaf rust, Puccinia rubigo-vera

PATHOGEN INDEX

New hosts are indicated by *

Cause Undetermined

Bends (Hairpin disease)[2]
Festuca elatior var. arundinacea
Bromus brizaeformis

Bends (Hairpin disease--continued
Setaria lutescens

Ascomycetes

Claviceps purpurea (Fr.) Tul.
Agropyron caninum
*Agropyron sibiricum
Dactylis glomerata

Erysiphe graminis DC.
Dactylis glomerata
*Elymus dahuricus
*Elymus triticoides
Festuca rubra
Millium effusum
Poa pratensis

Fungi Imperfecti

Darluca filum (Biv.) Cast.
- Hordeum bulbosum (with Puccinia graminis)
- Poa secunda (with Puccinia poae-sudeticae)
- Poa palustris (with Puccinia poae-sudeticae)

Helminthosporium vagans Drechs.
- Poa pratensis

Helminthosporium spp.
- Agropyron inerme
- Agrostis palustris
- Beckmannia erucaeformis
- Bromus marginatus
- Elymus condensatus
- Festuca elatior
- Poa ampla
- Poa nevadensis

Scolecotrichum graminis Fckl.
- Dactylis glomerata
- Poa compressa
- *Poa nevadensis

Ustilaginales

Urocystis agropyri (Preuss) Schroet.
- Agropyron repens

Ustilago bullata Berk.
- Bromus anomalus

Ustilago neglecta Niessl
- Setaria lutescens

Uredinales

Puccinia coronata Cda
- Bromus anomalus
- *Bromus brizaeformis
- *Bromus ciliatus
- *Bromus marginatus
- Bromus pacificus
- Bromus polyanthus
- *Bromus purgans
- Elymus canadensis
- *Elymus [canadensis var.] robustus
- *Elymus triticoides
- *Elymus virginicus

Puccinia graminis Pers.
- *Aegilops cylindrica
- Agropyron inerme
- Agropyron pauciflorum
- Agropyron repens
- Agropyron spicatum
- *Agropyron striatum
- Agropyron subsecundum
- Agrostis alba
- Agrostis exarata

Puccinia graminis Pers.--continued
- Dactylis glomerata
- Deschampsia caespitosa
- Elymus [virginicus var.] australis
- Elymus canadensis
- Elymus condensatus
- Elymus glaucus
- Elymus sibiricus
- Elymus sibiricus
- Elymus virginicus
- Festuca elatior
- *Hordeum bulbosum[3]
- Hordeum jubatum
- Hordeum jubatum var. caespitosum
- Hordeum nodosum
- Koeleria cristata
- Millium effusum
- Phleum pratense
- Poa ampla
- *Poa arctica
- Poa canbyi
- Poa compressa
- Poa juncifolia

Uredinales--continued

Puccinia graminis Pers.--continued
Poa nevadensis
Sitanion hystrix

Puccinia montanensis Ellis
Elymus canadensis

Puccinia poae-sudeticae (Westend.) Jørstad
Poa ampla
Poa canbyi
Poa compressa
Poa curta
Poa pratensis
Poa secunda
Poa palustris

Puccinia pygmaea Erikss.
Calamagrostis canadensis

Puccinia rubigo-vera (DC.) Wint.
*Aegilops cylindrica
Agropyron cristatum
Agropyron inerme
Agropyron repens
Agropyron sibiricum
Agropyron smithii
Agropyron spicatum
Agrostis alba
Elymus [virginicus var.] australis
*Elymus junceus
Hordeum jubatum
Sitanion hystrix
Sitanion jubatum

Notes:

1. In recent correspondence with the writer, Dr. G. W. Fischer stated that the terminology of this disease is to be discussed in a preliminary report soon to appear in Phytopathology.

2. This is apparently the same disease as briefly described by Dr. G. W. Fischer, Plant Disease Reporter 24 (5): 109, 1940. In a recent letter to the writer, Dr. Fischer stated that he preferred to refer to the disease as "Bends".

3. This is apparently the first report for the United States on this introduced grass, which has been quite disease-free. Stem rust (Puccinia graminis) is known on Hordeum bulbosum in Europe. See Plant Disease Bulletin 11 (4): 70, 1922.

(University of Michigan, Department of Botany.)

UNUSUAL DEVELOPMENT OF CEREAL RUSTS IN OKLAHOMA

David Dunn

Because of an unusual development of cereal rusts in Oklahoma during the fall of 1940 (PDR 24: 397, 431. 1940) the subsequent condition of wheat and oat fields was closely watched during the winter. The observations began on October 15, when heavy infections of leaf and stem rust [Puccinia rubigo-vera tritici, P. graminis] of wheat, and crown [P. coronata] and stem rust of oats were noted in the vicinity of Stillwater, sufficient in some cases to produce a noticeable yellowing of the fields. Certain of these fields were selected for weekly observation during the winter.

During the following month, which was marked by mild temperatures, frequent rains, and heavy dews, the 3 rusts continued to increase rapidly.

On November 13, the temperature suddenly dropped to 7° F. and this cold spell continued for several days. Most of the rust-infected leaves were partly or entirely killed, and leaves with but a few pustules regularly showed dead areas surrounding the pustules, the non-infected portions of such leaves being uninjured by the freeze.

Leaf rust urediniospores were taken from these dead leaves during the next few weeks and tested for viability. During the first 2 weeks germination percentages decreased; after this time no more viable spores could be found on the dead leaves, although sori were still present on the green tissues.

Stem rust urediniospores collected just after the freeze entirely failed to germinate. Crown rust urediniospores from the first 2 weeks of collections after the freeze showed a progressive decrease in viability and lost it entirely after that time. Thereafter and up to the present time no viable stem or crown rust spores have been found in repeated searches.

A few pustules of leaf rust survived the freeze, and by November 25 secondary spread from these was noted, the collections showing very high germination percentages. From that time on the amount of leaf rust became less and less but some pustules with viable spores were found in each field until January 28 when one of the fields yielded no rust after 30 minutes of search, although some was present in nearby wheat.

On February 4, after 3 weeks of mild and showery weather, primary rust pustules reappeared in this field. By February 12, the number of primary lesions was greatly increased and secondary spread was evident following unseasonably mild temperatures. At about that time, wheat samples were received from the county agent in Tillman County, in southwestern Oklahoma, showing such heavy leaf rust infection that obvious and marked injury must have occurred if these were random samples. A check of the fields on February 17 showed no further increase in infection since February 12. This fact correlates with the period of cool dry weather pre-ceding this date.

In view of these infections a survey trip was made on February 8 from Stillwater west to Hennessey, north through the main wheat area to Enid, and east and south to Stillwater. Leaf rust was found at all points of inspection with the greatest concentrations in the area from Enid south and east. Here numerous pustules were found on the older leaves, although thus far no appreciable damage to the pasture was apparent. While this area is the center of wheat production in Oklahoma it is ordinarily dryer than at Stillwater, hence the greater amount of rust was unusual.

These observations are in agreement with those from neighboring states (PDR. 25: 24, 1941; 24: 382, 462, 1940; "Rust, wintering in Texas may harm 1941 grain crop", U. S. Dept. Agr. Press Release, Jan. 24, 1941) and all point to an unusual prevalence of the cereal rusts for this time of year. While it is impossible as yet to predict the effect on the 1941 crops, it may be said that the conditions requisite for serious rust damage have been fulfilled thus far in the season.

(Oklahoma Agricultural Experiment Station.)

BRIEF NOTES ON PLANT DISEASES

OUTBREAK OF GRAY SPOT ON TOMATOES IN FLORIDA: Gray spot (Stemphylium solani Weber) caused a loss of several million plants in seed-beds in Manatee County this spring. One grower alone lost more than a million plants. All growers have used Cuprocide, on the beds, sprayed with various copper sprays, and most have dusted with copper dusts. The disease was first noticed January 15, soon after heavy rains and the low temperatures of January. All varieties were susceptible. (D. G. A. Kelbert, Florida Agricultural Experiment Station.)

HEAVY STEM RUST IN THE 1940 OAT VARIETY NURSERY OF THE WYOMING STATION: Stem rust (Puccinia graminis) on oat varieties in the 1940 nursery was much heavier than I had ever observed it before at the Agronomy Farm at Laramie. (G. H. Starr, Wyoming Agricultural Experiment Station.)